

Accident / Incident Report Closed



Unit/Department	Process Area	Site	Report Number
South Operation-Elyria		ELYRIA	0084-SOPS-14-0039
Report Date	Incident Date	Incident Time	Copied From
03/14/2014	03/14/2014	04:30 PM	
Incident Location	Team Leader / Supervisor	Reported By	
Building 31	Raymond A Navarro	John R Crawford	
Title of Event (Limit to 90 characters)	Category	Division / Bus. Group / Subgroup Code	
NOx release and evacuation	<input type="checkbox"/> Safety & Health <input type="checkbox"/> Environmental	CC / G-CCP	
Incident Classification			
<input type="checkbox"/> Near Miss <input checked="" type="checkbox"/> Process Safety <input type="checkbox"/> Injury / Illness <input checked="" type="checkbox"/> Spill / Release <input checked="" type="checkbox"/> Permit / Regulatory Deviation <input type="checkbox"/> Fire <input type="checkbox"/> Odor Complaint <input type="checkbox"/> Property Loss <input type="checkbox"/> Citation / NOV <input type="checkbox"/> Health Exposure <input type="checkbox"/> Inspection <input type="checkbox"/> Major Incident <input type="checkbox"/> Non-Occupational <input type="checkbox"/> RMP <input type="checkbox"/> Contractor <input type="checkbox"/> Contractor Injury / Illness <input type="checkbox"/> Contract Injury / Illness <input type="checkbox"/> PSM <input type="checkbox"/> Plant Upset <input type="checkbox"/> EHS Management System Failure <input type="checkbox"/> Other			
Describe Event / What Happened			
<p>At around 4:30 pm this afternoon the floor CRT was performing a safe work permit follow up in building 16 when he came upon the #1 RC and discovered Nox emanating from the feed end on the calciner. Right away the floor CRT pulled down the alarm and the entire department was evacuated. All personnel were accounted for including all of the contractors and maintenance personnel working in either building 31 and building 27. Once all of the personnel accounting was completed the ERT personnel proceeded to the ERT change room to gear up for the entry into building 31. At that time it was noted that the stack on the trimer was orange. It is also important of note that upon clearing the building and going over the equipment (specifically #1RC) it was noted that the fire blanket that covers the entry to the feed end of the calciner was charred - see attached picture.</p>			
Immediate Corrective Action or Response			
<p>Upon discovery of the Nox coming from the feed end of calciner #1, the floor CRT pushed in the evacuation alarm. All personnel evacuated, and were accounted for, the department and met at the rally point in front of WWTP. ERT team 1 made entry into building at 4:51 pm and switched on Trimer (switched ORP switch to ON) and closed the slide gate on #1 RC feed hopper. ERT team 2 made entry into building at 5:08 pm and checked with air monitor device all three floors, including offices and ultimately gave the all clear at 5:23 pm. Engineer (Bill Grodecki) was contacted to request evaluation on quantity of Nox released based on amount of material fed to calciner.</p>			
Immediate Cause			
<p>D-0795 flush material was ready to be fed through the calciner and it appears that the calciner had been set up to run through the Automatic Start up sequence so it was gaining temperature. When the automatic sequence completed its course (reached proper temperature) the syntron feeder began to feed the calciner. This occurred, per the trends, at 4:05 pm. The trimer was on but it was offline - this was discovered by ERT entry team #1. As the material was fed to the calciner, it is suspected that it began to Nox immediately. With the Trimer not online the Nox produced found its way up the trimer stack, though it was not scrubbed, and out of the feed end of the calciner as well as through the feed hopper on the second floor when it went empty (clearly the feed hopper went empty between 4:05 and 4:53 but not exactly sure when). It appears that during turn over from first to second shift the information passed on was not clear or not complete to the point where we seemed to have been aware we were running flush but not at temperature which would have explained why the Trimer was not online (ORP on the off position). It is worth noting that the Calciner Start-up sheet for the #1 calciner was not completed.</p>			
Spill Release Type(s)	RQ CERCLA / EPCRA		
Chemical(s) Involved	CAS #	Phy. State	Air
Nitrogen Dioxide (NOx)	10102-44-0	Gas	22
Land	Water	Contmnt	Units
0	0	0	lbs
Disposition of Material	Dispersed into air.		

Weather Conditions	Skies: Clear	Temperature: 40 F	Wind Direction:	Wind Speed:
Agencies Notified (F) Follow up (I) Immediate	Person Called	Notified By	Date/Time Notified	BASF Contact
USEPA NRC Ohio EPA	National Response Center Christine McPhee	Tim Anglin Tim Anglin	3/14/2014 7:30:00 PM 3/14/2014 7:45:00 PM	Tim Anglin Tim Anglin

Cause Narrative

One of the likely reasons is that the Calciner Start up sheet was not completed because the calciner went into auto start mode once conditions were met. The section related to Emission Controls would have caught that the Trimer, though on, was offline (ORP switch to off position). A second reason is that not enough information was passed on between the shifts related to the state of the #1 RC (Auto Start sequence had been engaged) temperatures while running flush. It was not clear to all employees that auto start was a possibility for the calciner operation

Contributing Causes	Root/Primary Causes		
Current evac alarm settings will allow calciner feed to resume once emergency conditions have been satisfied	15 - Design Input/Output	16 - Design Input LTA	16 - Design Input LTA
Communication between the shifts did not provide sufficient information to ascertain status of the #1 RC. Flush was being fed but no clear indication that the auto start up sequence on the calciner had been engaged and that temperatures were coming up on the calciner.	192 - Communications	205 - Job Turnover LTA	207 - Communication Between Shifts LTA
The Auto Start Sequence on rotary calciners allows to begin feeding once a temperature is reached without prompting the operator.	15 - Design Input/Output	17 - Design Output LTA	17 - Design Output LTA
There was no repeat-back between the shifts which may have contributed to a misunderstanding of the information passed along.	192 - Communications	200 - Misunderstood Communication	202 - Verification/Repeat-back Not Used
The setup for the manual slide gate is not defined in the procedure (should it be open or closed)	111 - Procedures	112 - Not Used	116 - No Procedure for Task
The ORP settings although sent to CCR do not stop the feed from being started to the calciner	138 - Human Factors Engineering	160 - Intolerant System	161 - Errors Not Detectable
Minimum suction setting for calciner is lower than adequate and needs to be set properly for various calciners	55 - Administrative/Management Systems	57 - Standards, Policies, or Administrative Controls (SPACs) LTA	60 - Not Strict Enough

Explanation of Root Causes

207 - Information was not transferred appropriately between the shifts
17 - Syntron can start feeding calciners once the set temperature is reached in automatic without the CRT operator being prompted
202 - has operators repeated the information and confirmed that it had been received the incident may have been averted.
116 - Slide gate over the syntron is a manual gate but no reference is made on the procedure but should be.
161 - There are no safeguards that would prevent the calciner from starting the feed if the ORP (online) is off.
60 - The suction on the calciner was not enough and a sudden rush of material at the start overwhelmed it.
16 - Typically we have been re-setting the alarm (silencing it) right at the beginning of an entry or just before the entry.
Resetting of the alarm will start the feed to the calciners again and place entry teams in danger.

Any known or potential off-site impacts?	No	PSM Incident?	No	Estimated Cost:	2,500.00 USD
Investigation Team	Raymond A Navarro; Rory O'Donnell; William Grodecki; Tim Anglin; Chuck Evans; Jennifer Bailey; Dean R Gadoury; Joe Yakopich; Terrence M Vanderbosch; William Grodecki; Leon Zavodnik; Robert Gavalek				

Item	Corrective Action(s) to prevent recurrence	Responsible Person	Target Date	Final Closed Date	VC Req	VE Req
1	Reiterate during Safety Meetings the need to	Raymond A Navarro/NA/BASF	03/30/2014	03/24/2014	N	N

	provide thorough turn overs amongst operators and GL's					
2	CRT operators must be prompted by the system to start feeding calciners rather than having the "Auto Start Up" program starting the feed.	Kirk Sullenberger/BASF-CATALYSTS/BA SF	04/29/2014	05/13/2014	N	N
3	Need to alter the current Evacuation Alarm system so that the feeds on calciners are not re-started when the system is reset.	Kirk Sullenberger/BASF-CATALYSTS/BA SF	04/29/2014	04/24/2014	N	N
4	Re-evaluate the necessary amount of suction for each calciner before start up and add new parameters to the program to prevent start up if conditions are not met.	Kirk Sullenberger/BASF-CATALYSTS/BA SF	06/29/2014	08/13/2014	N	N
5	Evaluate the potential to tie in the ORP settings to the programming in order to prevent the start up of any calciner going to the Trimer without satisfying minimum scrubber requirements.	Kirk Sullenberger/BASF-CATALYSTS/BA SF	05/30/2014	06/25/2014	N	N

Approved By:	
Manager / Dept. Head	Leon Zavodnik 05/22/2014 02:03 PM
EHS Unit Coordinator	Tim Anglin 05/22/2014 11:15 AM
Director / Site Manager	Sandy Kowaleski 07/01/2014 05:37 PM
Safety & I.H.	Dean R Gadoury 10/09/2014 04:41 PM
Confidential	

